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means of the movable weight, which deducted from the amount of the loaded sack, gives the weight of the coals true to a quarter of a pound.

The whole apparatus, with the exception of the suspending bar, goes into the box *no* which slides like a drawer beneath the tail of the waggon, and weighs (box included) less than 70 lbs.

The dotted lines *p* represent a small movable crane, or rather arm, from which the instrument may be hung, if it should be more convenient to weigh the sacks in the waggon instead of on the foot-pavement.

No. VIII.

LIFE - RAFT.

The LARGE SILVER MEDAL was presented to ALFRED CANNING, Esq., of 54, Richardson Street, Bermondsey, for his Life-Raft; Models of which have been placed in the Society's Repository.

SIR,

London, March 15, 1831.

I BEG leave to offer for the consideration of the Society of Arts, &c., the model of a life-raft which I have invented and tried. It is for the purpose of conveying persons shipwrecked over pointed rocks, and through breakers of the most formidable description to a lee-shore, in cases where even a life-boat or life-raft, constructed upon the best principles hitherto made public, must necessarily be dashed to pieces. The persons coming ashore upon my life-raft are not liable to frequent

immersion, and are amply protected from the violence of the shock in landing. I am prepared to attend with a model, and give every requisite explanation. Waiting an answer,

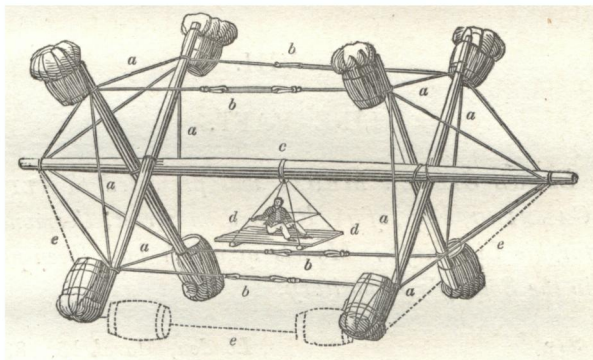
I am, &c. &c.

A. AIKIN, *Esq.*

ALFRED CANNING.

Secretary, &c. &c.

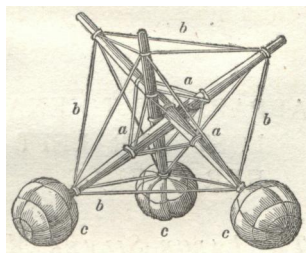
Mr. Canning exhibited two modifications of his raft. The first consists of a main-yard or other spar, with two cross pieces lashed on near each end of it, and kept properly extended by means of the ropes *aaa*, &c. In order to secure the stiffness of this frame, the four ends of the



connecting ropes terminate in loops *bbbb*, through which a smaller cord is rove and drawn as tight as possible. To each end of the cross pieces is attached a water-cask to give buoyancy to the raft, and the projecting head of each cask is covered by a hammock, which serves as a fender against rocks and floating pieces of wreck; or the casks may be fastened to ropes, as shewn by the dotted lines *ee*. A couple of loose rope-rings surround the middle of the main-yard at *c*, from which is suspended

the platform *dd* on which the men are to place themselves. The rope-rings may be confined to the middle of the yard by two chocks, one on each side of them. No more than four casks can be immersed at a time; and the object of the inventor in having twice the number, is to allow the raft to roll over without hazard to the people whom it is conveying: for the same reason also, the rope-rings from which the platform hangs are so loose as to slip round with every roll of the raft.

The second modification consists of three spars lashed together at the middle, and braced tight by the ropes *aaa* and *bbbb*. To the lower ends of these spars three casks or cork fenders *ccc* are attached, in order to secure the buoyancy of the machine.



A raft on the first construction was made trial of by Mr. Canning, at Cherbourg, in very rough weather. The machine being drawn out to the head of the Jetty, Mr. Canning seated himself on the platform, and the raft being then let loose was driven by the wind across the mouth of the harbour upon the rocks, and finally was thrown by the waves high and dry upon the shore, without any injury either to itself or to Mr. Canning.

An experiment with a raft of the second modification was made by the candidate in the island of Jersey, during very stormy weather, with complete success.

CERTIFICATE.

I was present when a landing was effected by Mr. Canning on his life-raft, at Jersey, on a rocky point,

where a heavy breaking sea was running, which rendered it impossible to be done by means of a boat. It appears to me to be a most simple, ready, and perfectly safe mode; and I have no hesitation in saying, I should myself adopt it in the event of shipwreck.

(Signed) J. N. MEREDITH, R.N.
Commander.

London, April 7, 1831.

No. IX.

APPARATUS TO ENABLE A WOMAN, WHO HAS
LOST HER LEFT HAND, TO WORK WITH
HER NEEDLE.

The LARGE SILVER MEDAL was presented to E. S. GRAEFF, Esq., of 24, Southampton Place, Euston Square, for his Apparatus whereby a Woman, who has lost the Left Hand, has been enabled to work with her Needle. The Apparatus has been placed in the Society's Repository.

THE poor woman for whom Mr. Graeff contrived the apparatus about to be described, lives at Finchley, and is a tenant of his. She has been in the regular use of the instrument for several months, and by means of it is capable of using her needle with ease and despatch. Specimens of work done by her, in darning, hemming, and sewing, were laid before the Committee.

A triangular piece of iron, bored with several holes, is let into the end of the leathern case which covers the stump, fig. 1. Over this is laid a circular plate of steel,